

IV. County Objectives

The WRP Regional Goals and key strategies provide a general framework for guiding the WRP's efforts. In this chapter, more specific needs and objectives have been identified for each County. These objectives were developed by each of the County Task Forces working in collaboration with the Wetlands Managers Group. In each county a few high priority projects are identified, but for the most part the listed objectives have not been prioritized. In fact, one common theme expressed by the Task Forces was the need to develop a system for setting priorities. The Science Advisory Panel is currently working with NOAA to develop a decision support tool for use by the Task Forces and Wetlands Managers Group to meet this need. The County Objectives identified in this chapter will be periodically revised to reflect changing conditions and new information.

This Chapter is organized by County, and each County discussion is divided into two sections. The first section is an overview of existing conditions at key coastal wetlands and watersheds in the county. The second section summarizes specific objectives for the county using the following format:

- Brief narrative summary of objectives and identified priorities.
- Listed objectives:
 - o Ecological objectives separated into county-wide and site-specific objectives.
 - o Organizational objectives, including education objectives.
 - o Data and research needs.

To avoid repetition, objectives that are essentially the same as the Regional Goals and key strategies are not repeated in this chapter.

San Diego County

[INSERT WATERSHED/WETLAND GRAPHIC OF COUNTY]

Summary of Existing Conditions

San Diego County includes the watersheds and associated wetlands from the Tijuana River north to San Mateo Creek. The coastal plain in the county extends about 10-15 miles inland. The climate is arid, with average annual rainfall of 10-14 inches. There are several large rivers in the county including the Tijuana, Otay, San Diego, San Luis Rey, and Santa Margarita Rivers. These rivers historically supported large wetlands systems at their mouths. Over one-third of the remaining coastal wetland acreage in Southern California is located in San Diego County. The majority of the coastal wetlands are already in public (or conservation) ownership. In northern San Diego County, a string of coastal lagoons are found at the mouths of smaller watersheds. The county also contains the largest area of vernal pools in Southern California.

Tijuana River Watershed

In the southwest corner of San Diego County, between the cities of Imperial Beach and Tijuana, Mexico, the Tijuana River meanders its way to the sea. The river's watershed encompasses 1700 square miles; 1245 in Mexico and 455 in the United States. The U.S. portion of the watershed is not highly developed; however, the Mexican portion flows through Tijuana, one of the fastest growing cities in Mexico. Key issues within the watershed include inflows of sediment and the periodic release of untreated sewage from the Mexican side of the watershed, and the spreading of *Arundo* and other exotic plants throughout the watershed.

Tijuana Estuary at the mouth of the river is one of the most important tidal wetlands on the Southern California coast, and has been designated by NOAA as a National Estuarine Research Reserve (NERR). The estuary has been less disturbed than many others in the region and supports several species of concern; however, raw sewage has been discharged to the river and side canyons intermittently for over fifty years. Sedimentation is also a significant problem in the estuary.

The Tijuana Estuary Tidal Restoration Program (TETRP) will eventually restore 500 acres of tidal marsh in the south arm of the estuary. The Model Marsh restoration was the first phase of this program. Implementation of the TETRP will require removing substantial amounts of sediment, and will be accomplished in association with several sediment management projects.

San Diego Bay

San Diego Bay covers 10,532 acres of water and 4,419 acres of tidelands. There are several coastal watersheds that discharge to the Bay, including the Otay and Sweetwater Rivers. Historically, the San Diego River also drained into the Bay. The character of the mudflat and salt marsh habitats around the former mouth of the San Diego River has been transformed by human activities. Dams were built on the Sweetwater and Otay Rivers that affect the pattern and quantity of freshwater inflow, as well as sedimentation. Only about 18 percent of the original Bay floor remains undisturbed by dredge or fill (Smith 1976).

Until recently, the Otay River watershed was largely unaffected by impacts of urban development. However, it is now one of the most rapidly developing areas of San Diego County. Key issues in the watershed include preservation of wildlife corridors, and riparian and floodplain habitat. The Otay River Regional Park was created in part to address these issues. At the mouth of the Otay River lies the South San Diego Bay National Wildlife Refuge (NWR). This NWR was formed in 1999 and restoration plans are in preparation.

Sweetwater Marsh is located at the mouth of the Sweetwater River and is also included in the planning for the South San Diego Bay NWR. The Sweetwater Authority, a water supply special district, conducts a watershed management program for the river. This program is focused primarily on water supply and water quality, rather than habitat concerns. Sediment quality is an issue in both the watershed and at the marsh.

San Diego River

Historically, the San Diego River drained into northern San Diego Bay. A large wetland complex at its mouth included coastal marshes and mud flats linking San Diego Bay and False Bay (Mission Bay). In 1850, the River was rerouted by the Army Corps of Engineers to drain into False Bay. A century later, False Bay was dredged to create Mission Bay Park, and the river was once again rerouted. A flood control channel now carries the lower river to the sea. The upper watershed contains over 800 acres of riparian forest, which provide habitat for the endangered Least Bell's vireo and migratory bird species.

There are two remnants of the river's natural marsh system— Kendall Frost Marsh Preserve in Mission Bay and Famosa Slough. Two pairs of breeding light-footed clapper rails and Belding's savannah sparrows were observed in 1995 at the Kendall Frost Reserve. Famosa Slough contains freshwater, brackish, and salt marsh habitats that support a diverse array of shore bird species, including least terns.

Mission Bay is a small-craft harbor and recreation area that is surrounded by a number of hotels, theme parks, and residential developments. A rip-rapped channel connects Mission Bay and the Ocean. There are 69 storm drains that enter the Bay. A 1994 report characterized the bay's primary water quality problem as contamination from urban runoff combined with poor tidal flushing. The bay contains three types of aquatic habitats – sandy bottom shallow water, eelgrass beds and rocky shoreline, and two types of intertidal habitats – mudflat and marsh. The eelgrass habitats of the Bay support over 25 species of marine fish and numerous invertebrates (California Coastal Conservancy 1989). Several of these species are important commercial and recreational fisheries. The islands within the Bay are used by nesting California least tern. The mudflats and marsh are habitats for the endangered light-footed clapper rail, Belding's Savannah sparrow, western snowy plover, California brown pelican, California horned lark and other species. A great blue heron rookery is also found within the Bay.

North County Lagoons

A string of lagoons line the northern coast of San Diego County. With the exception of Buena Vista Lagoon, all of the lagoons are tidal to some extent. Development in the watersheds of these lagoons has created a similar set of issues at each site, including:

- Altered hydrologic patterns and constrictions to tidal exchange resulting in more frequent closing of ocean inlets;
- Increased sedimentation and conversion of habitats (open water to marsh, marsh to dryland);
- Increased freshwater flows and conversion of salt and brackish marsh to freshwater marsh;
- Invasions of non-native species; and
- Encroachment of development and loss of wetland and supporting upland habitat.

Impacts of development in the watersheds of the lagoons vary significantly. The Los Penasquitos watershed is the most rapidly growing area in the City of San Diego, and has experienced significant increases in erosion from developing areas and construction sites. Preservation and

restoration of wildlife corridors is another key concern, and was one of the factors used in prioritizing areas in the County's Multiple Species Conservation Plan (MSCP).

Santa Margarita River

The Santa Margarita River is the least disturbed river system south of Point Conception, and contains some of the largest remaining populations in the state of several bird species, including the Least Bell's vireo and the California least terns (State Coastal Conservancy 1989). Twenty-seven miles of free-flowing river exist. The riparian habitat along the banks of the river is of particularly high quality, and is the most extensive riparian habitat in San Diego County. These riparian habitats are essential for the protection of migrating waterfowl and a number of endangered plants and animals. Approximately 200 acres of wetland habitat remain at the Santa Margarita estuary. These wetlands support a diversity of aquatic and plant species. The estuary supports clapper rails in the brackish marsh areas, endangered tidewater gobies in the brackish water, and a rich array of other special status species.

San Mateo Creek

The San Mateo Creek watershed falls within both San Diego and Orange Counties. Approximately 70 percent of the San Mateo Creek watershed is within the Camp Pendleton U.S. Marine Corps Base and the Cleveland National Forest. In 1999, steelhead trout were found in San Mateo Creek, which has focused much greater attention on the creek and opportunities for restoring steelhead habitat.

Vernal Pools in San Diego County

The main portion of the San Diego Vernal Pool Region occupies the extreme southwestern portion of the state stretching along the coast from the Camp Pendleton area near the Orange-San Diego county border south to the Otay Mesa area adjacent to the Mexican border. It extends inland in a continuous belt to the vicinity of Ramona about 40 miles from the coast. Two types of vernal pools (San Diego Mesa Claypan and San Diego Mesa Hardpan) have been identified as endemic to the county. Many vernal pools have been lost to development. The greatest loss of vernal pools in the County has occurred in the Mira Mesa, Peñasquitos, and Miramar industrial areas which account for 73 percent of all the pools lost in the county between 1979 and 1986. Other substantial losses have occurred in the Otay Mesa area where over 40 percent of the pools were lost between 1979 and 1990.

San Diego County Objectives

As stated above, the majority of the coastal wetlands in San Diego County are already in conservation ownership; therefore, WRP efforts to preserve coastal wetlands in San Diego will focus on: 1) acquisition of adjacent transitional and upland habitats that support the wetland ecosystems; and 2) reducing impacts from watershed inputs. The WRP's work in coastal watersheds in the county will focus initially on watersheds with adverse impacts on downstream wetlands or other coastal resources, and on preserving stream corridors that support substantial riparian and aquatic habitat or serve as a linkage between habitat areas.

One goal of the San Diego County Task Force is to develop a system for prioritizing wetland and watershed efforts based on all six of the WRP's regional goals. Possible criteria for the prioritization scheme include:

- High value wetland habitat.
- Preservation of habitat linkages and movement corridors.
- Areas identified in the MSCP, MHCP, or other habitat conservation plans.
- Areas identified in recovery plans for listed species.
- 303d-listed impaired waterbodies, or waterbodies where impairment is imminent.
- Areas facing the most imminent threats.

In San Diego County, there are two excellent organizations to help further the WRP's goal of advancing wetlands restoration science in Southern California. First, the Tijuana Estuary NERR was created to serve as a "living laboratory" in which scientists could conduct research and educators communicate research results. For this reason, the WRP will promote integration of wetlands restoration research studies into projects implemented in Tijuana Estuary. The Pacific Estuarine Research Laboratory (PERL) at San Diego State University has been a leader in wetlands restoration science in Southern California for many years. PERL has conducted research and monitoring at many sites throughout the county, including the Tijuana Estuary Model Marsh. The WRP will continue to coordinate and collaborate with PERL on wetlands research efforts.

More detailed objectives identified by the Wetlands Recovery Project and San Diego County Task Force are outlined below.

Ecological Objectives

County-wide Objectives

- Assess impacts of transportation corridors on coastal wetlands and watersheds. Examples include Interstate 5, railroad, PCH, and the planned toll road in the north county.
- Address erosion and sediment transport issues in the watersheds and coastal wetlands. Identify opportunities to modify dams to include sediment bypasses and manage water releases to simulate seasonal pulses.
- Address exotic species on a watershed basis
- Identify priority projects for each watershed and wetland in the county.
- Restore habitat functionality of wetlands and stream corridors.

Site-Specific Objectives

Tijuana Estuary and Watershed

- Complete the Goat Canyon Enhancement Project. Develop and implement additional sediment management projects.
- Complete the 500-acre, multi-phased Tijuana Estuary Tidal Restoration Program.
- Develop and implement a removal and management program for exotic species in the watershed.

South San Diego Bay and Watersheds

- Restore and enhance the South San Diego Bay wetlands in accordance with the restoration plan being developed by the U.S. Fish and Wildlife Service.

San Diego River and Watershed

- Continue to implement the Famosa Slough Enhancement Plan.
- Identify preservation and restoration priorities within the watershed.

Mission Bay and Watershed

- Enhance salt marsh habitat at Rose Creek and Kendall Frost Reserve.
- Address impacts of watershed inputs, including freshwater, sediment, nutrients, and contaminants.

North County Lagoons

- Address impacts of watershed inputs, including freshwater, sediment, nutrients, and contaminants.
- Develop long-term management plans and funding mechanisms for the lagoons.
- Develop and implement removal and management programs for exotic species in the watersheds.

San Luis Rey River

- Develop and implement a removal and management program for exotic species in the watershed.
- Identify preservation and restoration priorities within the watershed.

Santa Margarita River

- Develop a watershed management plan for the river and its tributaries.
- Preserve and enhance the high quality habitat along the Santa Margarita River.
- Coordinate with the U.S. Marine Corps to protect and enhance the lower watershed.
- Develop and implement removal and management program for exotic species in the watershed.

San Mateo Creek

- Enhance habitat for steelhead trout in San Mateo Creek.
- Develop and implement removal and management program for exotic species in the watershed.

Organizational Objectives

- Coordinate and integrate watershed planning efforts in the county. Create a regional wetlands/watersheds coordinator position to foster more cooperative activity among wetlands and watershed efforts in the county. Develop a system of communication and information exchange among all of the wetlands and watershed stakeholders in the county. Promote watershed planning throughout the county for each watershed with special attention to sediment flows.

- Establish position to coordinate related work being done on the stormwater permit and watershed management efforts. Explore how the regional storm water permit can serve as a vehicle to promote broader coordination among those with interests in habitat and water quality in the county.
- Integrate wetlands objectives into the MSCP and General Plan 2020.
- Promote development of cross-jurisdictional transferable development rights (TDRs) to preserve large swaths of land in less developed areas.
- Promote cooperation with Orange County in the San Mateo Creek watershed.

Orange County

[INSERT WATERSHED/WETLAND GRAPHIC OF COUNTY]

Summary of Existing Conditions

Orange County is divided into two distinct physiographic subregions. Southern Orange County extends from the San Diego County line up through Laguna Beach and is characterized by short, steep watersheds with few coastal wetlands. Northern Orange County is part of the Los Angeles Basin and has a much broader coastal plain with larger river systems and relatively large coastal wetlands. The northern subregion extends from the San Diego Creek watershed north to the San Gabriel River.

Southern Orange County (San Juan Hydrologic Unit)

Southern Orange County falls within the San Juan Hydrologic Unit, which extends from San Mateo Creek north to Laguna Beach. Several of the coastal creeks in this subregion have been impacted by development in their watersheds. Degraded water quality, loss of riparian and aquatic habitat, infestation of exotic species, and excessive channel and bank erosion are common issues in these watersheds. The Army Corps of Engineers has been working with the County of Orange to develop comprehensive watershed management and restoration plans for the San Juan and Aliso Creek watersheds. As discussed under San Diego County, steelhead trout were found in San Mateo Creek in 1999. San Juan Creek also supports potential steelhead habitat.

Northern Orange County

In Northern Orange County, the coastal plain broadens, extending 30 miles or more inland. Three large watersheds dominate this portion of the County – San Diego Creek, the Santa Ana River, and the San Gabriel River. Historically, the Santa Ana and San Gabriel Rivers roamed freely over the coastal plain, periodically changing the location of their mouths. For example, the mouth of the Santa Ana River fluctuated from Anaheim Bay in the north to Upper Newport Bay in the south. These two large, free-flowing rivers supported vast expanses of wetlands on the coastal plain. Remnants of these large coastal wetlands include Upper Newport Bay, the Santa Ana River/Huntington Beach wetlands complex, Bolsa Chica wetlands, Anaheim Bay, and the Los Cerritos wetlands complex.

Most of the watersheds and wetlands in the Los Angeles Basin, including those in northern Orange County, share several problems attributable to the extensive degree of urbanization. These include:

- Loss of riparian and floodplain habitat as a result of channelization and undergrounding of stream corridors.
- Increased storm runoff quantity and peak flows due to increased impermeable surfaces in the watershed. This has contributed to increased channel incision and bank erosion with loss of riparian habitat and increases in downstream sedimentation.
- Decreased water quality resulting from increased loads of sediments, nutrients, metals, and organic compounds, and increased water temperature.

Upper Newport Bay and San Diego River Watershed

Upper Newport Bay supports some of the highest quality tidal marsh in Southern California. The upper Bay includes more than 900 acres of wetland habitat, and supports populations of the California light-footed clapper rail, Belding's savannah sparrow, and California least tern. The major issues for the upper Bay are sedimentation, bacterial contamination, toxics, and eutrophication from excessive nutrient inflows. The upper bay is managed by CDFG as an ecological reserve. The ACOE, County, and CDFG are undertaking a project to dredge 2.1 million cubic yards of sediment from the upper Bay as part of a long-term sediment management program.

Santa Ana River/Huntington Beach Wetlands Complex and Watershed

The Santa Ana River estuary and Huntington Beach wetlands are a remnant of a 2900 acre wetland system that flourished at the mouth of the Santa Ana River. Today only approximately 300 acres remain, of which approximately 120 have been restored. The remaining lands are privately owned, and the habitat is fairly degraded. The Santa Ana River flows in a concrete flood control channel from just below Prado Dam to its mouth. This greatly limits opportunities for restoration of riparian and aquatic habitat.

Bolsa Chica Wetlands

Diking, filling, oil extraction activities, and other anthropogenic impacts have significantly degraded wetlands in this subregion. Despite land-use activities within the watershed, the Bolsa Chica wetlands complex is an incredibly diverse ecosystem that includes a range of invertebrate, reptile, bird, fish and other species. A compilation of 15 surveys from 1970 through 1993 identified 206 species, including 129 water related species and 32 special status species. A partnership of eight state and federal agencies is coordinating a project to restore approximately 880 acres of the Bolsa Chica Wetlands. Mitigation monies from the Ports of Los Angeles and Long Beach are partially funding the project.

Anaheim Bay

Anaheim Bay supports some of the healthiest wetlands in southern California, and a portion of the Bay has been incorporated into the Seal Beach NWR. The Bay is located within the boundaries of a U.S. Naval Weapons Station which limits opportunities for enhancement.

Approximately 956 acres of wetlands remain at Anaheim Bay, and numerous species of concern use the site.

Los Cerritos Wetlands and San Gabriel River Watershed

The San Gabriel River Watershed and Los Cerritos wetlands complex straddle the boundary between Los Angeles and Orange Counties. The San Gabriel River watershed encompasses approximately 610 square miles and 828 miles of waterways. The River is channelized for much of its length, with the lower channel completely encased in concrete. The Los Cerritos wetlands lie at the mouth of the San Gabriel River; however, much of the wetlands are now hydrologically isolated from the river. Historically the Los Cerritos wetlands complex supported approximately 2400 acres of wetland habitat. Today, only a few hundred acres remain. The remnant marsh is bordered by oil production facilities, and residential, commercial, and industrial development. California least tern and Belding's savannah sparrow are two of the listed species known to use the wetlands. Major portions of the Los Cerritos wetlands are privately owned.

Vernal Pools in Orange County

Currently, there are only a few remnant vernal pools and hints of disturbed pools in coastal Orange County. There is some evidence from old aerial photographs that vernal pool terrain similar to the mesas of northern San Diego County existed at least as far north as San Clemente and Laguna Beach.

Orange County Objectives

Two of the significant coastal wetlands in Orange County are primarily privately owned – the Santa Ana River /Huntington Beach wetlands complex, and Los Cerritos wetlands complex. Acquisition of these sites from willing sellers is a high priority for the WRP.

The WRP's objectives for coastal watersheds in Orange County differ markedly between the northern and southern portions of the county due to significant differences between the watersheds in these areas. Restoration opportunities along the lower Santa Ana and San Gabriel Rivers are limited since the rivers flow through concrete channels. In the lower watersheds of these rivers, WRP efforts will focus on restoring or recreating wetland habitat adjacent to the river channels. In southern Orange County, the WRP will focus on addressing the impacts of urban development on the stream corridors. Proactive action on these creeks now will be far more cost-effective than trying to restore them after further degradation.

One goal of the Orange County Task Force is to develop a system for assessing and prioritizing wetlands projects. Due to the threat of permanent loss, preservation of remaining resources would be prioritized over restoration of degraded resources. Projects that achieve multiple benefits such as both habitat and water quality improvements or beach nourishment would also be prioritized.

More detailed objectives identified by the Wetlands Recovery Project and Orange County Task Force are outlined below.

Ecological Objectives

County-wide Objectives

- Coordinate with public works agencies to reduce impervious surfaces in road and other infrastructure projects.
- Develop recommendations/guidance for “compatible access” in a highly populated area.
- Promote projects to retain stormwater in the watersheds to increase opportunities for habitat enhancements along stream corridors and reduce need for armoring channels.
- Promote best management practices to reduce inputs of sediment, nutrients, and contaminants in the watershed. Examples include irrigation practices on agricultural, residential, and commercial lands.

Site-specific Objectives:

Aliso, San Juan and San Mateo Creeks

- Address impacts of urban development on creeks including increased storm flows, increased erosion, invasive species, and degraded water quality.
- Complete the ACOE/County watershed studies for Aliso and San Juan Creeks. Identify and implement projects consistent with WRP Regional Goals.
- Identify and implement projects that have both habitat and water quality benefits.
- Identify opportunities for re-establishing steelhead in southern Orange County creeks, particularly San Juan and San Mateo Creeks.

Upper Newport Bay and Watershed

- Complete the Upper Newport Bay Ecological Restoration Project led by the ACOE and County.
- Address impacts of watershed inputs, including sediment, nutrients and contaminants.
- Identify and prioritize additional restoration and enhancement work needed at Upper Newport Bay.
- Complete and implement the ACOE/County watershed study for San Diego Creek. Preserve and restore aquatic and riparian habitat in the San Diego Creek watershed, particularly along Serrano Creek.
- Identify opportunities for habitat preservation and restoration, particularly habitat corridors, at the El Toro base.

Santa Ana River/Huntington Beach Wetlands Complex and Watershed

- Acquire and restore wetlands and adjacent upland areas at the mouth of the Santa Ana River and along the Huntington Beach Wetlands.
- Develop the Orange Coast River Park and restore a continuum of wetland habitats from tidal salt marsh to riparian along the lower three miles of the Santa Ana River.

Bolsa Chica wetlands

- Complete Port-funded restoration project.
- Acquire and restore contiguous wetland and transitional areas that function as part of the wetland ecosystem.

Anaheim Bay and watershed

- Address impacts of watershed inputs, including sediment, nutrients and contaminants.
- Pursue additional restoration and enhancement opportunities with the Navy.

Los Cerritos Wetlands and San Gabriel River Watershed (see Los Angeles County for additional objectives)

- Acquire and restore wetlands and adjacent upland areas at Los Cerritos Wetlands.
- Pursue off-channel habitat restoration and re-creation along the lower reaches of the San Gabriel River, where the river is completely confined to concrete.
- Develop a watershed management plan for Coyote Creek and identify restoration opportunities.

Organizational Objectives

- Promote wetlands and watershed education.
 - Promote inclusion of environmental education elements in the statewide science curriculum. Expand on the pilot program developed by the County and Surfrider Foundation.
 - Pursue off-site education opportunities in high-use venues, such as grocery stores, possibly through use of posters.
 - Educate potential funders about value of healthy wetlands and watersheds.
- Increase available funding.
 - Secure private sector funding for projects and research. Promote participation in the WRP by the private sector, particularly the tourism industry (including financial participation).
 - Promote establishment of a dedicated funding source for projects.
 - Address need for long-term maintenance funding.
- Encourage more public/private partnerships
- Complete GIS mapping for the County, and develop comprehensive GIS mapping system for the five counties.
- Educate private landowners about best management practices for their land and promote incentives for encouraging them to preserve resources on their land.
- Increase coordination among wetlands and watershed efforts.
 - Provide information and scientific substantiation to local governments to assist in land use planning. Reach local governments through existing venues such as the League of Cities.
 - Coordinate with vector control agencies.
 - Promote integration of wetlands objectives into public works projects.
 - Promote BMPs for new developments, particularly BMPs that reduce/slow stormwater flows.
 - Identify opportunities for preserving or restoring resources on lands that are already publicly owned, and work with landowner agencies to implement projects.
 - Assist in the development of a cooperative management entity for the Orange Coast River Park.
 - Coordinate WRP efforts with NCCP and SAMP processes.
 - Coordinate WRP efforts with SWRCB Proposition 13 grants.

- Promote better coordination among resource agencies when developing projects.
- Review existing regulations and identify ways to better streamline or coordinate regulatory processes.
- Organize a science and management conference for Upper Newport Bay.

Data and Research Needs

- Inventory lagoon and estuarine wetlands and their resources at the mouths of southern Orange County streams.

Los Angeles County

[INSERT WATERSHED/WETLAND GRAPHIC OF COUNTY]

Summary of Existing Conditions

Similar to Orange County, Los Angeles County is divided into two distinct the physiographic subregions – the Los Angeles Basin and the Santa Monica Mountains. The LA basin is a broad coastal plain drained by four main waterways – the San Gabriel River, Los Angeles River, Dominguez Channel¹, and Ballona Creek. Los Angeles County has lost over 90 percent of its coastal wetlands, a greater percentage than any other county in the region. Most of this loss occurred within the Los Angeles basin. Within the basin, only two significant coastal wetland areas remain: the Los Cerritos wetlands complex, and the wetlands and lagoons near the mouth of Ballona Creek. Large portions of both these sites are privately owned.

The highly urbanized watersheds of the Los Angeles Basin share the same concerns as those in Orange County, namely:

- Loss of riparian and floodplain habitat as a result of channelization and undergrounding of stream corridors.
- Increased storm runoff quantity and peak flows due to increased impermeable surfaces in the watershed. This has contributed to increased channel incision and bank erosion with loss of riparian habitat and increases in downstream sedimentation.
- Decreased water quality resulting from increased loads of sediments, nutrients, metals, and organic compounds, and increased water temperature.

In contrast to the LA basin, the Santa Monica Mountains contain many short, steep drainages, most of which are in a fairly natural state. Coastal lagoons have formed at the mouths of the larger drainages, including Malibu, Topanga and Trancas Lagoons.

San Gabriel River and Los Cerritos Wetlands

See Orange County section for description.

¹ Historically the Dominguez channel watershed was part of the Los Angeles River watershed. However, when Dominguez channel was created, it was hydrologically disconnected from the Los Angeles River.

Los Angeles River

The Los Angeles River watershed encompasses 835 square miles. Historically, the Los Angeles River roamed freely over the coastal plain and alternated between San Pedro Bay and the area of Ballona Wetlands on Santa Monica Bay. The historic wetlands associated with the Los Angeles River included extensive marshes, streams, lakes and seeps covering much of present day downtown Los Angeles to San Pedro Bay and eastward to the San Gabriel River. The lower Los Angeles River was once part of one of the largest floodplains in the United States.

Virtually the entire river has now been channelized and paved for flood control purposes, destroying hundreds of acres of aquatic, riparian, and wetland habitat. Runoff from the highly urbanized watershed has created significant water quality problems in the river. Opportunities to restore habitat and hydrologic functions along the river are limited, but there is growing interest in the local community to realize these opportunities.

Ballona Creek and Wetlands

Ballona Creek is located on the northern end of the Los Angeles Basin and drains into Santa Monica Bay. Ballona Wetlands, Ballona Lagoon, and Del Rey Lagoon are all remnants of the large wetland complex that historically existed at this location. The Ballona wetlands complex provides habitat for several species of concern including the California least tern and the Belding's Savannah sparrow. Major portions of the Ballona wetlands are privately owned.

Santa Monica Mountains

The Santa Monica Mountains subregion differs substantially from the highly urbanized Los Angeles Basin. The mountains cover approximately 240 square miles, and are primarily open space. There are over 20 coastal drainages in the Santa Monica Mountains, which are characterized by relatively short, steep watersheds with little or no wetlands habitat at the mouth. Average rainfall in the subregion is 24 inches per year. Several creeks in this region support steelhead runs, or did so historically. In comparison to much of Southern California, the watersheds in the Santa Monica Mountains are in relatively good shape. For this reason, the focus in this subregion is on the preservation of habitat and stream functions, rather than on restoration.

Malibu Lagoon is the largest coastal wetland in the Santa Monica Mountain subregion. Approximately 92 acres of wetland habitat remain; however, the historical acreage is estimated to be several times this amount. Key issues at Malibu Lagoon include poor water quality, restricted tidal circulation within the lagoon, and increased freshwater inflows during the dry season. A task force of federal, state, and local agencies is working on a multi-year effort to restore the lagoon and lower reaches of Malibu Creek.

Santa Clara River

The Santa Clara River is the largest unchannelized riverine system in the south coast. The upper watershed is located in Los Angeles County. See Ventura County section for description.

Los Angeles County Objectives

As discussed above, only two significant coastal wetlands remain in the Los Angeles, both of which are primarily privately owned. Therefore, acquisition of Los Cerritos and Ballona wetlands ecosystems from willing sellers is a high priority for the WRP. Once acquired, restoration and enhancement of these sites would be the next step. The coastal lagoons in the Santa Monica Mountains region are primarily publicly-owned; however, acquisition of adjacent properties would enable restoration of historic wetland habitat. This is a priority, particularly at Malibu Lagoon. Another key issue for these coastal wetlands is addressing the impacts of sediment, nutrient, and contaminant inputs from the watersheds.

The lower portions of all four rivers that drain the Los Angeles Basin are largely confined to concrete channels. For this reason, restoration opportunities in the lower watersheds will focus on restoring or recreating wetland habitat adjacent to the river channels. In the upper watersheds, there are more opportunities for preserving and enhancing existing habitat. In the Santa Monica Mountains region, the WRP will focus on: watersheds adversely impacting downstream wetlands or other coastal resources; existing or potential steelhead streams; and systems with substantial aquatic or riparian habitat.

More detailed objectives identified by the Wetlands Recovery Project and Los Angeles County Task Force are outlined below.

Ecological Objectives

County-wide Objectives

- Identify high priority projects for acquisition and restoration for each watershed in the county.
- Improve watershed health by managing levels of sediment, nutrients and contaminants in all watersheds that will result in improved water quality. Identify options for disposing of road spoils other than by creating road berms that erode into streams and/or are invaded by exotic species.
- Promote projects to retain stormwater and urban runoff throughout each watershed to increase opportunities for habitat enhancements in all river and stream corridors.
- Promote alternatives to fire protection policies that prevent erosion, reduce the invasion of non-native species and do not require the removal of native vegetation. Educate landowners and agencies about appropriate vegetation removal that meets current fire protection policies.
- Protect wetlands from impacts of adjacent development.
- Assess impacts of transportation corridors on coastal wetlands and watershed ecosystems (particularly all the inter-mountain routes).
- Evaluate potential to preserve and reintroduce steelhead in streams of Los Angeles County.

Site-Specific Objectives

San Gabriel River

- Develop and implement restoration, watershed, and long-term management plan(s) for the San Gabriel River and its tributaries. These plans may address issues including, but not limited to, restoring or creating aquatic, riparian, and marsh habitat, both within soft-bottom and off-channel areas, removal and management of exotic species, and preservation of sensitive species.
- Develop high quality, multi-species habitat linkages along the river, capable of supporting sensitive species and connecting core wildlife populations in the San Gabriel Mountains and Puente Hills.
- Develop watershed management plan for Coyote Creek. Evaluate restoration of wetlands at the confluence of Coyote Creek and San Gabriel River.
- Support the creation of habitat (e.g., riparian, marsh, and grassland/scrub) in parkway and greenway projects along the river and its tributaries.

Los Cerritos wetlands complex

- Acquire coastal wetlands and associated upland habitat.
- Develop and implement restoration plan.
- Develop and implement long-term management plan.
- Develop and implement a restoration plan for Colorado Lagoon

Los Angeles River (including Dominguez Channel)

- Develop and implement restoration, watershed, and long-term management plan(s) for the Los Angeles River and its tributaries and Dominguez Channel. These plans may address issues including, but not limited to, restoring or creating aquatic, riparian, and marsh habitat, both within soft-bottom and off-channel areas, removal and management of exotic species, and preservation of sensitive species.
- Support the creation of habitat (e.g., riparian, marsh, or grassland/scrub) in parkway and greenway projects along the river and its tributaries.
- Restore and enhance remnants of the historic Los Angeles River estuary such as Cabrillo Salt Marsh and other saltwater marshes along the lower reaches of the Los Angeles River.
- Develop and implement restoration and enhancement plan for the Wilmington Drain and Harbor Lake.
- Evaluate potential for habitat linkages from Verdugo Hills to the San Gabriel Mountains in the Angeles National Forest.

Ballona Creek watershed and estuary wetlands

- Integrate planning and management for entire Ballona wetlands complex, including Ballona Lagoon, Del Rey Lagoon, Grand Lagoon, Marina del Rey Harbor, and Oxford Lagoon.
- Acquire coastal wetland and associated upland habitat.
- Develop and implement a restoration and long-term management plan for Ballona wetlands complex.

Santa Monica Mountain Watersheds

- Preserve existing resources. Develop criteria and list of acquisition priorities for the region with the cooperative effort of all stakeholders.
- Preserve, expand, and enhance coastal wetland and lagoon habitat ecosystems. Coastal wetlands within the Santa Monica Bay and Mountains should be considered as a single, discontinuous ecosystem.
- Preserve and restore coastal stream corridors including:
 - Remove/modify fish passage barriers in perennial streams and enhance fisheries habitat, especially for southern steelhead.
 - Enhance riparian vegetation.
 - Develop comprehensive removal and management plans for invasive exotic species.
 - Enhance lagoon/wetlands ocean interface to improve tidewater goby habitat, especially at Topanga, Las Flores and Trancas Creeks.
- Address impacts of sediment, nutrients, and contaminants on coastal wetland
- Evaluate need and opportunity for high quality, multi-species wildlife corridors.
- Educate residents, public agencies and decision makers about their role in watershed management.
- Implement priority projects identified in the Santa Monica Bay Restoration Plan that further the WRP's Regional Goals.

Organizational Objectives

- Organize a coordinated governance structure for the County task force.
- Develop education programs and tools for decision-makers, landowners, and students.
 - Produce document showing historical and existing extent of wetlands.
 - Educate about wetland functions and potential role in improving water quality.
 - Increase visibility of wetlands and watershed efforts in local communities.
 - Promote educational forums for implementing Best Management Practices throughout the County, including things such as: reduction of impervious surfaces, interception devices, drainage retention and reduction strategies, integrated site planning.
- Evaluate options for long-term management of public resource lands in County and make recommendations.
- Improve coordination and communication on wetlands and watershed projects.
 - Coordinate with Army Corp of Engineers to improve wetlands mitigation programs.
 - Coordinate WRP project planning and implementation with the Rivers and Mountains Conservancy, the Santa Monica Bay Restoration Project, and the Santa Monica Mountains Conservancy.
 - Increase cross-jurisdictional communication and coordination between the County, Army Corp of Engineers and other jurisdictions regarding vegetation management within rivers and streams to maximize both habitat and stormwater/urban runoff management objectives.
 - Coordinate and integrate watershed planning efforts throughout the County. Develop a network that involves all wetland and watershed stakeholders in a system of communication, education and information exchange.
 - Develop list of resource experts that could help grassroots organizations.

- Coordinate efforts to map vegetation in Los Angeles County (e.g., Los Angeles County Forestry, Cal Poly Pomona, Los Angeles and San Gabriel Rivers Watershed Council).
- Integrate WRP goals and objectives and watershed planning into local land use plans and policies.
- Identify sources and coordinate efforts to secure funding for priority acquisitions and restorations.

Data and Research Needs

- Inventory of Santa Monica Mountain streams that includes riparian and aquatic habitat, wetlands- and riparian-dependent species of concern, habitat linkages and movement corridors, existing or historic steelhead runs, and fish passage barriers. The Santa Monica Mountains National Recreation Area has mapped the watersheds but some data gaps need to be filled.

Ventura County

[INSERT WATERSHED/WETLAND GRAPHIC OF COUNTY]

Summary of Existing Conditions

Ventura County includes three major watersheds – Calleguas Creek, the Santa Clara River, and the Ventura River – and supports some of the region’s healthiest riparian and wetland habitats. Both the Santa Clara and Ventura Rivers have suitable spawning habitat for steelhead trout. The primary coastal wetlands in the county include Mugu Lagoon, Ormond Beach, and the Santa Clara and Ventura River estuaries. As in other counties, urban and agricultural development within the watersheds has contributed to degradation of habitat and water quality. In addition, pesticides have accumulated in aquatic life and sediments.

Calleguas Creek and Mugu Lagoon

Calleguas Creek originates in the Santa Monica Mountains and drains a predominantly agricultural area in southern Ventura County. Development within the watershed has caused severe erosion from stream channels and upland areas, and has significantly increased downstream sedimentation. High levels of minerals and nitrates are common in the water column as well as in the groundwater. In addition, discharges from sewage treatment facilities contribute excess nutrients into Mugu Lagoon. DDT, PCBs, other pesticides, and some metals have been detected in both sediment and biota collected from surface water bodies of this watershed. The aquatic habitats and species that depend on the Mugu Lagoon remain threatened by water quality concerns associated with Calleguas Creek.

Mugu Lagoon is the largest estuarine lagoon in Southern California. Despite water quality problems, Mugu Lagoon remains one of the highest quality wetlands remaining in California, and supports the greatest concentration of water-associated birds north of Anaheim Bay. In addition, Mugu Lagoon is recognized as the closest large mainland roost to the major breeding colony of California brown pelicans at Anacapa Island, and serves as a staging area for birds and

seals moving to and from the island. Approximately 1,474 acres of wetland habitat are found at Mugu Lagoon.

Ormond Beach Wetlands

Historically, the Ormond Beach Wetlands and Mugu Lagoon were part of one large wetlands complex. Today, approximately 217 acres of wetland habitat remain at Ormond Beach stretched along one mile of the coast. The majority of wetlands at Ormond Beach are no longer tidally connected, but historically they probably received muted tidal influence through channels and sloughs connected to Mugu Lagoon. Although the fragmented wetlands of Ormond Beach are for the most part highly degraded, they still provide valuable wildlife habitat and have a high potential for restoration. Poor water quality in the adjacent drainage channels and possible contaminated groundwater from proximate industrial facilities contribute to the degraded status of the wetlands. The use of off-road vehicles along the beach and dunes area is a major disturbance to wildlife. Additionally, pressure to convert farmlands north of the wetlands to urban uses could increase the amount of nonpoint source contaminants entering the marsh areas.

Santa Clara River

The Santa Clara River is the largest unchannelized riverine system in the south coast. The watershed encompasses approximately 1,200 square miles. Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. These riparian habitats serve as an important stopover for migratory bird species. Sespe Creek, one of the main tributaries to the Santa Clara River, is designated as a wild trout stream by the State, and supports significant spawning and rearing habitat. Piru and Santa Paula Creeks also provide good steelhead habitat. The Santa Clara River watershed provides habitat for a wide range of threatened and endangered species. Encroaching development in the floodplain and proposed channelization and other flood control activities threaten the health and integrity of riparian habitat within the watershed.

Ventura River

The Ventura River watershed encompasses 228 square miles, and is 31 miles long from upper Matilija canyon to the Pacific Ocean. The Ventura River ecosystem supports 23 species of special concern. These species include steelhead trout, the California condor, California red-legged frog, and California Brown pelican. The major issue within this watershed is the dramatic historical decline of the southern steelhead, which is an indication of the general health of the aquatic ecosystem. A planning process to remove dams and other barriers for steelhead passage within the upper watershed of the Ventura River continues. Removal of Matilija Dam would provide fish passage to historic steelhead breeding waters in the upper watershed, and greatly enhance the opportunities for restored habitat for the other species of concern.

Ventura County Objectives

Preservation and restoration of coastal wetlands in Ventura County will focus on the Ormond Beach wetlands, Mugu Lagoon, and the Santa Clara and Ventura River estuaries. Acquisition and subsequent restoration of the Ormond Beach wetlands area is a high priority for the WRP. Mugu Lagoon lies completely within the Point Mugu Naval Station, limiting opportunities to

undertake enhancement projects. In order to help preserve valuable wetland resources at the lagoon, the WRP will focus on addressing upstream impacts to the lagoon, such as inputs of sediment, nutrients, and contaminants from Calleguas Creek.

All three of the main river systems in Ventura County – Calleguas Creek, the Santa Clara River, and the Ventura River – remain in a relatively natural state, providing many opportunities for preserving and restoring the stream corridors. A key objective will be to reconnect these waterways to their floodplains. This can be accomplished through acquiring adjacent property (fee title or easements) and relocating the confining levees to widen the stream corridor. Comprehensive programs to control and remove invasive species from the watersheds, particularly *Arundo*, are also needed. Restoring steelhead habitat and removing passage barriers in historic steelhead streams is a priority for the WRP.

More detailed objectives identified by the Wetlands Recovery Project and Ventura County Task Force are outlined below.

Ecological Objectives

County-wide Objectives

- Develop comprehensive programs to control and remove invasive species, particularly *Arundo*, from the watersheds
- Address wetlands and watershed issues that have the greatest potential to improve coastal water quality
- Develop a regional hydrogeomorphic (HGM) model to characterize wetlands functions, adapting the information that has been developed for Calleguas Creek.
- Implement demonstration projects to help local landowners protect and enhance the watershed through low-cost measures (e.g., cover crops, mulching) and share this information with other counties.

Site-Specific Objectives

Santa Monica Mountains

- Preserve stream corridors and riparian habitat in the portions of the Malibu Creek watershed in Ventura County.

Calleguas Creek watershed and Mugu Lagoon

- Implement projects identified in the Calleguas Creek watershed management plan.
- Address impacts on Mugu Lagoon of watershed inputs, including inflows of sediment, nutrients, and contaminants.

Ormond Beach Wetlands

- Acquire the Ormond Beach wetlands.
- Develop and implement a restoration plan for the area.
- Develop an interpretive program for the area.

Santa Clara River estuary and watershed

- Expand Santa Clara River management plan beyond the 500-year floodplain to include tributaries and watershed.
- Prepare and implement an enhancement plan for the Santa Clara River estuary.
 - Enhance steelhead habitat in the river.
 - Enhance lower SCR as a steelhead migratory corridor by restoring aquatic and riparian habitat and removing fish passage barriers.
 - Address exotic species (plant and fish) in the watershed, especially along Sespe Creek.
- Preserve existing floodplain and reconnect river to its floodplain where feasible. Establish a continuous riparian corridor from the Santa Clara River Estuary to Santa Paula/Fillmore.

Ventura River estuary and watershed

- Develop and implement a watershed management plan for the Ventura River.
- Enhance steelhead habitat in the river, in particular by removing or modifying Matilija Dam and other fish passage barriers.
- Preserve existing floodplain and reconnect river to its floodplain where feasible.

Organizational Objectives

- Improve communications and coordination within the county.
 - Develop watershed councils for each watershed.
 - Create a watershed coordinator position charged with facilitating communications throughout the county.
 - Identify a County staff person to coordinate watershed activities between County agencies.
 - Inventory goals, projects, and accomplishments of agencies and organizations working in the county.
 - Address impediments to information and data sharing.
 - Promote the Ventura County Weed Management Area.
- Improve coordination with Los Angeles and Santa Barbara Counties on cross-jurisdictional watersheds.
- Secure funding for projects and positions.
- Develop a public awareness/education program.
- Promote alternatives to traditional flood control through more environmentally-sensitive techniques; that is, promote watershed management instead of flood control.

Data Needs

- Establish data protocols so that information is collected and consolidated in way that all users can easily share it.
- Inventory relevant data sources and establish a clearinghouse so that information can be readily shared.
- Develop a database of flora in Ventura county, including a list of plants that are rare within the county.

Southern Santa Barbara County

[INSERT WATERSHED/WETLAND GRAPHIC OF COUNTY]

Summary of Existing Conditions

The Southern California Wetlands Recovery Project includes the coastal wetlands and watersheds of Santa Barbara County up to Point Conception. Southern Santa Barbara County includes the watersheds from Rincon Point northwest to the creeks of the Gaviota coast. Several creeks flow onto the narrow coastal plain between Goleta and Rincon Point, and support riparian habitat of varying size and vigor. The coastal creeks and watersheds of southern Santa Barbara County are associated with the south facing Santa Ynez Mountains. These coastal watersheds and associated wetlands are unique in the context of Southern California since they are located in an area where the northern and Southern California biological provinces meet. The region is the northernmost boundary for many species of southern California. Restoration plans are currently being implemented in the three major wetlands of the south county – Carpinteria Salt Marsh, Devereux Slough and Goleta Slough.

The Santa Barbara Vernal Pool Region covers all of southern and western Santa Barbara County from the Santa Maria area south and east to the western portion of Ventura County adjacent to Ojai and the Ventura River drainage. Coastal vernal pools are found at More Mesa, Isla Vista, and Ellwood Mesa.

Carpinteria Salt Marsh and Watershed

The Carpinteria Salt Marsh watershed encompasses 6,600 acres, and includes the tributaries of Santa Monica and Franklin Creeks. Carpinteria Marsh is situated amid residential development. Carpinteria Salt Marsh is typically tidally influenced, but in some years a barrier bar forms at the ocean inlet. If this occurs, the bar is mechanically breached to maintain year-round tidal flushing. At least 190 bird species, 37 fish species, 11 mammal species, 5 herpetofauna species, and over 100 invertebrate species have been observed, collected, or reported from Carpinteria Salt Marsh. Water quality that drains to the marsh is degraded due to pesticides, siltation, nutrients, and urban run-off. Non-native predators, typical of suburbanized watersheds, continue to be a threat to nesting birds and other wildlife. In the upper watershed, there are many barriers to fish passage.

Goleta Slough and Watershed

The Goleta Slough watershed encompasses 45 square miles. The tributaries of the watershed include San Jose, Tecolotito, Carneros and Atascadero Creeks. Goleta Slough covers approximately 430 acres, and is almost entirely surrounded by urban development. Santa Barbara Municipal Airport is located on fill within the Slough. In 1996, 279 species were identified at Goleta Slough, including 20 species of special status. In a 1994, 117 pairs of Belding's Savannah sparrows were observed nesting in the slough. Public utility and transportation corridors traverse the wetland, and airport runways, a sanitary treatment plant, a power generation station, and light industrial facilities are constructed on filled portions of the marsh. Continued sediment deposition is reducing the tidal prism. Due to limited buffer areas along the perimeter of the wetlands, wildlife are disturbed by highway traffic and activities in the developed areas. Several

creeks within the watershed provide habitat suitable for southern steelhead restoration, but flood control dams, diversion dams, and culverts block fish passage.

Devereux Creek

The southern part of the Gaviota Coast includes the Devereux Creek watershed. The watershed area encompasses 2330 acres. Devereux Slough is located on the West Campus of the University of California at Santa Barbara, and supports approximately 70 acres of wetlands. Historically, the slough is estimated to have been 2 to 3 times its present size. The slough is tidally influenced only during short periods in the winter. A beach berm forms at the mouth of the slough during drier months. Biological inventories have identified 290 species associated with the slough and Coal Oil Point Reserve, including 15 species of special status. Sediment loading is reducing the size of the slough. Continued residential development in the watershed may increase contamination of runoff and sediment entering the slough. Exotic plant species are displacing native plants and altering the habitats.

Santa Barbara County Objectives

Preservation and restoration of coastal wetlands in southern Santa Barbara County will initially focus on Carpinteria Salt Marsh, Goleta Slough, Devereux Slough, and coastal vernal pool habitat. Carpinteria Salt Marsh, Goleta Slough, and Devereux Slough are primarily in public ownership. Therefore, WRP efforts will focus on restoration and enhancement of wetland habitat, as well as acquisition of contiguous upland and riparian habitat. Several coastal vernal pool sites in Santa Barbara remain in private ownership. WRP efforts will initially focus on preservation of these sites, followed by restoration and enhancement.

In the coastal watersheds of southern Santa Barbara County, there are significant opportunities for habitat restoration and enhancement because the streams have only been moderately impacted by urban and agricultural development and few have been confined to concrete channels. WRP efforts will focus on preserving functioning stream corridors, restoring and enhancing urban streams, and recovery of steelhead trout.

At the University of California at Santa Barbara, there several resources for promoting the WRP's goal to advance the science of wetlands restoration in Southern California. First, U.C. staff manage all or portions of Goleta Slough, UCSB Campus Lagoon, Devereux Slough, and Carpinteria Salt Marsh, which will facilitate the integration of research into restoration and enhancement activities. In addition, the WRP will work with UCSB's Bren School of Environmental Science and Management to identify faculty research and student group thesis projects that respond to WRP research priorities.

More detailed objectives identified by the Wetlands Recovery Project and Ventura County Task Force are outlined below.

Ecological Objectives

County-wide Objectives

- Develop a master plan for watersheds in the South Coast Hydrologic Unit, including an inventory of existing information and identification of gaps and other planning needs.
- Improve steelhead habitat by modifying and removing passage barriers and enhancing habitat. Improve migratory access for steelhead in streams historically utilized by them to promote recolonization of those streams.
- Preserve and re-establish to the extent possible habitat linkages and wildlife movement corridors.
- Preserve functioning stream corridors, in part by encouraging landowners, the cities, and County to take proactive measures to protect streams from the impacts of continued urbanization.
- Restore and enhance stream corridors.
 - Restore natural balance to transport of sediment, water and biological material.
 - Re-establish native riparian vegetation (from local genetic stock).
 - Develop comprehensive watershed programs to control and remove invasive species and treat urban and agricultural runoff.

Site-Specific Objectives:

Urban creeks

- Develop and implement watershed restoration and steelhead recovery plan in the Carpinteria Creek watershed.
- Assist the County in developing and facilitating a comprehensive watershed assessment and management plan for San Jose Creek.
- Promote development of a comprehensive management plan for the entire Mission Creek watershed, that addresses restoration, flood management, and recreation concerns. Develop and implement community- and landowner-based restoration projects along a midstream reach of Mission Creek.
- Assist the Cities of Carpinteria and Santa Barbara in developing action plans for their creeks based on the information in their city creek assessments.
- Facilitate a coordinated City-County effort to remove exotics and restore habitat in the Arroyo Burro watershed.
- Help implement high-priority steelhead recovery projects identified in Conception Coast Project's South Coast Steelhead Recovery Study.

Goleta Slough and its watershed

- Promote development of a multi-party management plan for the western arm of Goleta Slough.
- Partner with Goleta Slough Management Committee and others to address sediment transport and other watershed inputs into the Slough, and resolve FAA issues that are currently impeding restoration opportunities. Implement restoration measures found to be compatible with airport functions.
- Protect and restore surrounding upland habitat.
- Pursue steelhead recovery projects in appropriate subwatersheds.

UCSB Campus Lagoon

- Promote implementation of UCSB management plan for the Lagoon.

Carpinteria Salt Marsh and its watershed

- Develop and implement projects to enhance additional areas of the marsh.
- Address impacts on the marsh from watershed inputs, particularly nutrients.

Devereux Slough and its watershed

- Address erosion and sediment flows in the watershed, and the impacts of these on the Slough.
- Plan and implement restoration projects for the Slough.
- Identify long-term acquisition opportunities for adjacent freshwater wetlands and upland areas that are part of the wetland ecosystem.

Vernal pools

- Preserve and enhance vernal pool habitat at Isla Vista, More Mesa and Ellwood Mesa.

Organizational and Education Objectives

- Promote community-based watershed planning efforts in the county. Encourage creation of watershed councils for key creeks.
- Develop and implement demonstration projects to encourage riparian landowners to restore and maintain creek health and stability.
- Promote a more holistic approach to flood control management in the county. Encourage active participation by the County Flood Control District in the County Task Force and its projects.
- Investigate development of a master permit (or permit streamlining) system for stream and wetland restoration projects
- Improve coordination on wetlands and watershed activities.
 - o Coordinate stream restoration efforts with water quality assessment and planning processes.
 - o Coordinate steelhead recovery projects with priorities established by the Tri-County steelhead coalition.
 - o Coordinate with UCSB's Long Term Ecological Research study of the Santa Barbara Channel (Point Conception to the Santa Clara River).
 - o Promote involvement by the US Forest Service (Los Padres National Forest) in the County Task Force and watershed planning and restoration projects.
 - o Work with Ventura County Task Force to coordinate watershed planning for Rincon Creek.
 - o Cooperate with Ventura and other County Task Forces to sponsor workshops and seminars on restoration and other topics.
- Develop a system to pool, coordinate, and manage volunteer efforts for restoration projects.
- Encourage cities to adopt BMPs for streamside development.
- Public education and access
 - o Develop a *Creek Care Guide* for southern Santa Barbara watersheds.

Chapter IV: County Objectives

- o Study the potential for a nature trail from More Mesa to Ellwood Mesa as an organizing theme for resource protection and interpretation.
- o Utilize the South Coast Watershed Resource Center to help develop public outreach and education projects and to house WRP studies, reports and data for easy access by the community.
- o Promote understanding of wetlands and watersheds in K-12.

Data and Research Needs

- Inventory lagoon and estuarine wetlands and their resources at the mouths of all southern Santa Barbara streams.
- Initiate a water budget study for all streams that will identify estimated historic and current flow conditions, water extractions, and estimates of necessary flows to ensure long-term ecological sustainability. Evaluate potential watershed-specific Dedicated Instream Flow Requirements for fish and other wildlife.